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BRIEF COMMUNICATION

AN ADDITIONAL RECORD OF A MEIOLANIID TURTLE FROM THE PLEISTOCENE OF NORTHERN QUEENSLAND

The extinct meiolaniids are an enigmatic group of turtles characterised by cranial horns and tail clubs. They are confined to the Southern Hemisphere and their phylogenetic relationships have been the subject of much discussion[1]. The oldest known Australian meiolaniids come from Oligocene and Miocene deposits in South Australia, New South Wales and Queensland[2-4]. Most of the Australian material collected to date however, comes from Late Pleistocene deposits of Lord Howe Island[5,6]. There are additional Pleistocene occurrences of meiolaniid from Walpole Island, New Caledonia, the Darling Downs of Queensland and from the Wyandotte Formation[7]. This note reports the presence of further meiolaniid fossils from Pleistocene deposits of Bluff Downs, north-eastern Queensland.

Bluff Downs is currently only known as a Pliocene site with a wide range of taxa already having been reported[8-14]. During field investigations in 1992, further fossil exposures were located upstream from, and on the opposite side to, the main Pliocene quarries. The fossils were located in a gully that cut through a black soil plain and included mammals, crocodiles and turtles. A detailed examination of the fossils revealed little softening of features normally associated with transportation or re-working and it was therefore assumed that the original site of deposition was relatively close. There were no overlying formations that could give an age to the fossils.

However, the new collecting locality, named Jaw Site, contained a diagnostic P^3 of the diprotodontid marsupial, *Zygomaturus trilobus* Macleay, a species with a Pleistocene distribution[15]. This tooth differed from the P^3 of a new species of *Zygomaturus* that had been recovered from the Bluff Downs Pliocene sediments (Lat. 19° 43′ S, Long. 145° 36′ E), indicating that Jaw Site was not Pliocene in age[16]. Furthermore, there was no evidence of the commonly found Pliocene diprotodontid *Euryzygoma* which was a major component of the Bluff Down Local Fauna[8]. The age of the site was therefore either Plio-Pleistocene or Pleistocene by biocorrelation.

A number of bone fragments with distinctive sculpturing was identified as being possible meiolaniid tail club fragments. This identification was confirmed by E. Gaffney of the American Museum of Natural History. One group of fragments (QM F25854) contained 12 individual pieces including one partial tail club spike and the distal ends of caudal vertebrae (Fig. 1 A, B). The other group (QM F25855) contained two tail club spike fragments and a number of smaller bone shards (Fig. 1 C). The tails of these land-dwelling turtles were covered with articulated bony rings armoured with spikes.

The Wyandotte meiolaniid was identified as having affinities with *Meiolania platyceps* from Lord Howe Island rather than the mainland species *M. oweni* from Kings Creek, Darling Downs[5]. Unfortunately not enough material has been recovered to make any constructive taxonomic assignment for the Bluff Downs specimens except for identification as a meiolaniid. Unlike its Lord Howe Island counterpart, the Bluff Downs meiolaniid had a number of giant reptiles to contend with including several species of crocodile[13], a large varanid and python[8]. Whether the significant armour the meiolaniid possessed was enough to protect it from these potential predators will perhaps never be known. Its development and elaboration during the Tertiary perhaps suggests some sort of defence strategy.

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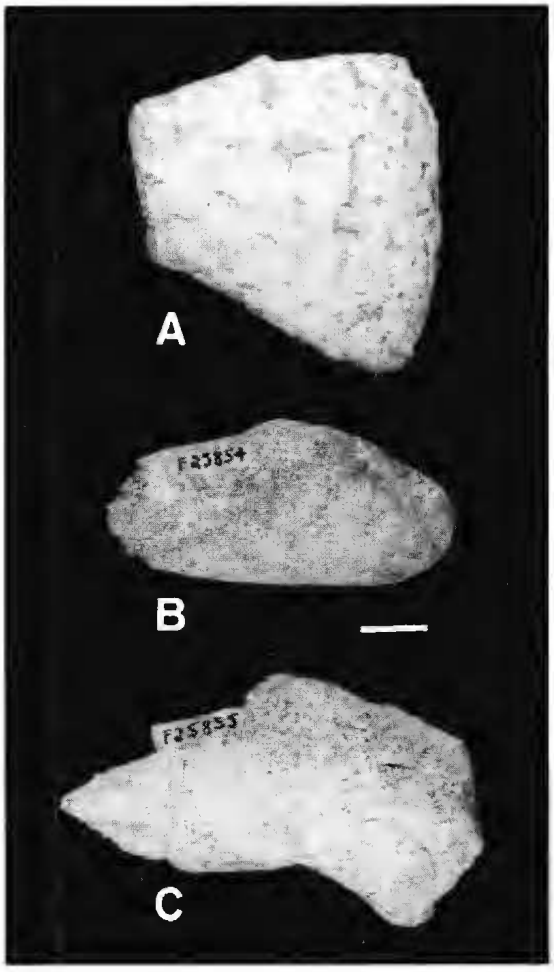

Fig. 1. Meiolaniid turtle fragments. QM F25854. A. Partial tail club spike. B. Distal end of caudal vertebra. C. QM F25855. Tail club spike fragment. Scale bar = 5 mm.

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